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UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte DAVID W. CANNELL and NGHI VAN NGUYEN

Appeal 2008-5130
Application 09/931,919
Technology Center 1600

Decided:¹ April 24, 2009

Before TONI R. SCHEINER, DEMETRA J. MILLS, and JEFFREY N.
FREDMAN, *Administrative Patent Judges*.

MILLS, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF CASE

This is an appeal under 35 U.S.C. § 134. The Examiner has rejected the claims for obviousness. We have jurisdiction under 35 U.S.C. § 6(b). The following claim is representative.

1. A method for lanthionizing keratin fibers to achieve relaxation of said keratin fibers comprising:

(i) applying a pretreatment composition to said keratin fibers, wherein said pretreatment composition comprises at least one reducing agent chosen from thioglycolates for a sufficient period of time to reduce at least one keratin bond in said keratin fibers;

(ii) rinsing said keratin fibers;

(iii) generating hydroxide ions in at least one solvent, wherein said step of generating comprises including at least one hydroxide compound in said at least one solvent;

(iv) applying a composition comprising said generated hydroxide ions to said keratin fibers for a sufficient period of time to lanthionize at least one of said keratin fibers;

(v) heating said keratin fibers; and

(vi) terminating said lanthionization when said keratin fibers are relaxed.

Cited References

Petrow

US 4,659,566

Apr. 21, 1987

Grounds of Rejection

Claims 1-9, 12-30 and 33-41 stand rejected under 35 U.S.C. §103(a) over Petrow.

ISSUE

The Examiner argues that Petrow teaches using elevated temperatures and heat-activated formulations (lines 46-50, column 10). (Ans. 6.)

Appellants argue that Petrow fails to teach the claimed heating step (v), and that nothing in Petrow suggests the use of a heating step after application of the composition comprising generated hydroxide ions. (App. Br. 13-14.)

The issue is: Does Petrow disclose a heat activation step after application of a composition comprising generated hydroxide ions, as claimed?

FINDINGS OF FACT

Prior Art

1. “PETROW teaches methods of permanently waving keratinous fibers, particularly hair, and compositions of matter useful in these methods.” (Ans. 6.)
2. Petrow teaches consumable reducing agents such as salt and ester of thioglycolic acid, or a sulfite (abstract).
3. “Thioglycolic ester is thioglycolate. PETROW also teaches compositions and methods useful for altering the shape of hair by relaxing or straightening naturally or artificially waved keratinous fibers, particularly hair.” (Ans. 6.)
4. “PETROW teaches that [in] the reduction stage, the first stage of the method, the disulfide linkages (S--S) of the keratin fiber are opened with the aid of reducing agents, including thioglycolates, sulfites, and bisulfites, etc. See the entire document especially lines 45-67 in col. 1, lines 1-29 in col. 2, examples, and claims.” *Id.*
5. Petrow teaches that “hair is processed for 23 minutes under the salon hair dryer at the ‘Normal setting’ (lines 14 and 15 in column 19). The treated hair exhibited a cosmetically acceptable wave with small, springy

curls and 'according to recipient and beautician, the hair had a healthy, undamaged appearance['] (lines 19-22, column 19). See lines 20-25 in column 3." (Ans. 6.)

6. Petrow "teaches using elevated temperatures. It also teaches heat-activated formulations (lines 46-50, column 10)." *Id.*

7. "Instant claims differ from the reference [Petrow] in claiming more specific steps." *Id.*

8. The Examiner finds that:

One skilled in the art at the time of invention would have been motivated to prepare a method of relaxing keratinous fibers of the hair using thioglycolates with the expectation of success because PETROW teaches a compositions and methods useful for altering the shape of hair by relaxing or straightening naturally or artificially waved keratinous fibers, particularly hair.

Id. at 6-7.

Specification

9. According to the Specification:

"Heating" refers to the use of elevated temperature (*i.e.*, above 100°C). In one embodiment, the heating in the inventive method may be provided by directly contacting the keratin fibers with a heat source, *e.g.*, by heat styling of the keratin fibers. Non-limiting examples of heat styling by direct contact with the keratin fibers include flat ironing, and curling methods using elevated temperatures (such as, for example, curling with a curling iron and/or hot rollers). In another embodiment, the heating in the inventive method may be provided by heating the keratin fibers with a heat source which may not directly contact the keratin fibers. Non-limiting examples of heat sources which

may not directly contact the keratin fibers include blow dryers, hood dryers, heating caps and steamers.

(Spec. 10-11.)

10. According to the Specification:

[T]he relaxing capability of the composition comprising at least one hydroxide compound (which is subsequently applied) may be increased by breaking at least some of the cystine disulfide bonds in the keratin fibers and forming the cysteine residue using the pretreatment composition, and by the use of heat. Thus, the heat and the presence of the cysteine residues may catalyze the rearrangement of the protein rearrangement and lanthionization within a keratin fiber. Therefore, low concentrations of the at least one hydroxide compound may be sufficient to effect relaxation of the keratin fibers.

(Spec. 13.)

PRINCIPLES OF LAW

“In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness.” *In re Rijckaert*, 9 F.3d 1531, 1532 (Fed. Cir. 1993) (citations omitted). Only if that burden is met, does the burden of coming forward with evidence or argument shift to the applicant. In order to determine whether a *prima facie* case of obviousness has been established, we considered the factors set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966); (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the relevant art; and (4) objective evidence of nonobviousness, if present.

ANALYSIS

Appellants argue that Petrow fails to teach the claimed heating step (v), and that nothing in Petrow suggests the use of a heating step after application of the composition comprising generated hydroxide ions. (App. Br. 13-14.)

The Examiner responds, arguing that Petrow teaches, that:

"ambient or room temperature was about 75.degree. F. When experiments were performed at room temperature, the hair samples were not enclosed. When experiments were performed at higher temperatures, the hair samples were enclosed in a plastic bag which was then warmed to the desired temperature using a salon-type hair dryer". Lines 65-68, column 12 and, lines 1-3 in column 1-3. See lines 24-30, where use of elevated temperature is taught.

The reference further teaches, "In practice, the glycerol monothioglycolate composition of this embodiment may be advantageously be applied either as a "cold wave" or as a heat-activated formulation. Heretofore, this material was useful primarily only when heat activated" (lines 46-50, column 10).

The reference teaches that hair is processed for 23 minutes under the salon hair dryer at the "Normal setting". (lines 14 and 15 in column 19). The treated hair exhibited a cosmetically acceptable wave with small, springy curls and according to recipient and beautician, the hair had a healthy, undamaged appearance" (lines 19-22, column 19).

(Ans. 9-10.)

We are not persuaded by the Examiner's argument. To begin, according to the Specification, "heating" refers to the use of elevated temperature (*i.e.*, above 100°C). Thus, we do not find that the processing of

hair at room temperature encompasses heating at an elevated temperature. In addition, we do not find that Petrow's teaching of the processing of hair under a salon dryer for 23 minutes meets the claim limitation of (iv) applying a composition comprising said generated hydroxide ions to said keratin fibers for a sufficient period of time to lanthionize at least one of said keratin fibers; (v) heating said keratin fibers; and (vi) terminating said lanthionization when said keratin fibers are relaxed. In particular, Petrow teaches heating the hair and then applying a peroxide neutralizing composition. (Col. 18, ll. 45-54; col. 19, ll. 13-18.) We do not find that the Examiner has pointed to any evidence of the order of steps of (iv) applying a composition comprising said generated hydroxide ions to said keratin fibers for a sufficient period of time to lanthionize at least one of said keratin fibers; (v) heating said keratin fibers; and (vi) terminating said lanthionization when said keratin fibers are relaxed. We find the order of the claimed steps has an influence on the final resulting product. *See Loral Fairchild Corp. v. Sony Corp.*, 181 F.3d 1313, 1322 (Fed.Cir.1999) ("Although not every process claim is limited to the performance of its steps in the order written, the language of the claim, the specification and the prosecution history support a limiting construction in this case.").

In view of the above, the obviousness rejection is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

REVERSED

Appeal 2008-5130
Application 09/931,919

cdc

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
901 NEW YORK AVENUE, NW
WASHINGTON DC 20001-4413